escalation

Time Limit: 1 seconds
Memory Limit: 256 MB

1 Problem Description

In Bunnyland, there is a central computer network that handles most of the administrative work in Bunnyland, such as taxes, tolls and carrot rationing in times of emergencies. This network is made of N computers numbered from 1 to N, with $N-1$ connections (also numbered from 1 to $N-1$) between computers such that one can travel between any 2 computers using only the connections.

To ensure that only authorised users can send information between different computers, all of the connections have require a certain level of access to use. The i^{th} connection connects the A_i^{th} and B_i^{th} computers and has a minimum access level of L_i, so that only users with access level at least L_i can use the connection.

Daniel the Orange was recently hired to test the network, and is planning to use a number of privilege escalation attacks to gain access to the computers. The j^{th} computer contains D_j bytes of data, and Daniel wants to maximise the amount of data he can grab.

Daniel will try Q attacks, the k^{th} can reach an access level of E_k. For each attack, Daniel will select any 2 computers in the network whose path between them **consists only of connections with minimium access level at most** E_k, and **takes the data from all computers on the path (including the 2 on the ends of the path)**. Help Daniel determine the maximum amount of data he can grab in bytes for each of the Q attacks.

2 Input Format

The input format is as follows:

- The first line will contain 2 spaced integers, N and Q respectively.
- The next $N-1$ lines will contain 3 spaced integers each, the i^{th} of which contains A_i, B_i and L_i.
- The next line contains N spaced integers, the j^{th} of which is D_j.
- The next Q lines contain 1 integer each, the k^{th} of which is E_k.

3 Output Format

The output format is as follows:

- Output Q lines with 1 integer each, the k^{th} of which is the maximum amount of data that Daniel can grab using the k^{th} attack.

4 Subtasks

Subtask	Score	N	Q	Additional Constraints
1	5	$2 \leq N \leq 10^3$	$1 \leq Q \leq 10^3$	$A_i = i, B_i = i + 1$
2	17	$2 \leq N \leq 10^5$	$1 \leq Q \leq 10^5$	$A_i = 1, B_i = i + 1$
3	13	$2 \leq N \leq 10^5$	$1 \leq Q \leq 10^5$	$D_i = 1$
4	25	$2 \leq N \leq 10^5$	$Q = 1$	-
5	10	$2 \leq N \leq 200$	$1 \leq Q \leq 200$	-
6	13	$2 \leq N \leq 10^3$	$1 \leq Q \leq 10^3$	-
7	17	$2 \leq N \leq 10^5$	$1 \leq Q \leq 10^5$	-
8	0	Sample Testcases		
For all subtasks: $2 \leq N \leq 10^5, 1 \leq A_i, B_i \leq N$ $1 \leq L_i, E_i, D_i \leq 10^9$				

5 Examples

standard input	standard output
5 4 1 2 4 2 3 2 3 4 3 4 5 6 1 3 3 1 5 1 2 3 7	5 6 7 13
6 4 1 2 3 2 6 2 3 4 1 1 3 4 5 3 6 5 4 5 4 6 3 2 3 4 6	9 12 21 23
11 5 1 2 3 1 3 4 3 4 4 3 5 10 5 6 3 5 7 6 4 8 5 6 9 1 1 10 2 7 11 11 10 11 12 4 5 1 1 10 12 2 10 6 1 8 7 12	47 13 47 47 51